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Worldwide Report

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16 September 1982

WORLDWIDE REPORT

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CONTENTS

ASIA

AUSTRALIA

Labor Party Proposes Special Study of Toxic Waste Dumping (Ted Knez; THE AUSTRALIAN, 2 Aug 82)	1
Drought Cuts Value of Grain Crop by \$300 Million (Alex Greig; THE AUSTRALIAN, 2 Aug 82)	2
Environmental Cost of Hunter Valley Industry Weighed (THE SYDNEY MORNING HERALD, 20 Jul 82)	3
Beach Erosion Less Than Thought, Study Indicates (Bill Ord; THE COURIER-MAIL, 20 Jul 82)	5
Tasmanian Dam Opponents Plan Blockade of Bulldozers (THE AUSTRALIAN, various dates)	6
Recruitment Campaign, by Peter Dwyer Police Counteraction Plan, by Peter Dwyer Police Attack on Gray, by Peter Dwyer	
New Technique Aids Tracking of Indonesian Volcanic Ash (THE WEST AUSTRALIAN, 22 Jul 82)	9
Struggle To Preserve Queensland Rainforests Reviewed (THE AUSTRALIAN, 23 Jul 82)	10
Destruction of Natural Forest for Government Planting Assailed (THE AUSTRALIAN, 26 Jul 82)	12

Professional Groups Urge NSW Government to Spare Rainforests (Joseph Glascott; THE SYDNEY MORNING HERALD 2 Aug 82)	13
Briefs	
Logging Issue	14
Sewerage Pollution of River	14
Anti-Erosion Program	14
Brisbane Port Development	15
Antiherbicide Order	15
Fodder-Tree Experiment	15
Catchment Clearing	16
Smelter Effect on Environment	16
BANGLADESH	
Chittagong Logging, Cultivation Add To Erosion (Syed Murtaza Ali; THE BANGLADESH OBSERVER, 12 Aug 82)	17
INDIA	
Monitoring of Industrial Effluents Proposed (THE STATESMAN, 8 Aug 82)	18
Forest Board Endorses Proposal To Revise Policy (THE HINDU, 9 Aug 82)	19
NEW ZEALAND	
Briefs	
Environment Commission Report	21
PEOPLE'S REPUBLIC OF CHINA	
Editorial on Environmental Pollution, Output (Editorial; RENMIN RIBAO, 22 Aug 82)	22
PHILIPPINES	
Crisis Situation Grips Coastal Waters Ecosystem (Feliciano H. Magno; VISAYAN HERALD, 3 Aug 82)	24
LATIN AMERICA	
CUBA	
Reportage on Protected Wildlife Areas in Country (Alfredo Nieto Dopico; BOHEMIA, 23 Jul 82)	26

SUB-SAHARAN AFRICA

GHANA

- Briefs
Fishing With Chemicals 30

SOUTH AFRICA

- Briefs
Mistery Oil Spill 31
Dunswart Pollution Controls 31

USSR

USSR

- Effect of Human Activity on Ecological and Physiological Features
of Alpine Plants
(G. Sh. Nakhutsrichvili; SOOBASHCHENIYA AKADEMII NAUK
GRUZINSKOY SSR, Jan 82) 32
- Experimental Construction of a System for Bioindication of the
Waste Water Purification Process
(V. N. Nosov, et al.; BIOLOGICHESKIYE NAUKI, Mar 82) 35

WEST EUROPE

GREECE

- Insecticides Found Dangerous, Multinationals Blamed
(TA NEA, 19 Aug 82) 36

LABOR PARTY PROPOSES SPECIAL STUDY OF TOXIC WASTE DUMPING

Canberra THE AUSTRALIAN in English 2 Aug 82 p 2

[Article by Ted Knez]

[Text]

THE Labor Party wants a special authority set up to control the dumping of hazardous chemicals to help combat the "slow poisoning" of Australia.

The proposal, outlined yesterday by the Opposition spokesman on the environment and conservation, Mr Stewart West, is central to ALP policy which would be implemented under a federal Labor government.

Some environmentalists fear that toxic waste leaching from dumping sites will eventually poison waterways and land.

Mr West agreed that such fears were justified and said that the dumping of chemicals was creating an environmental time-bomb requiring massive clean-up operations in the future.

He said that 15,000 tonnes of "intractable waste" were stored in factories around

Sydney because there was no adequate means of disposal.

"The metropolitan waste disposal authority cannot accept them at its land disposal facility, and the NSW Government has been forced to drop its plan for an incinerator in the face of local community

opposition," Mr West said.

The 15,000 tonnes of waste could only be disposed of in a high-temperature incinerator of the type the NSW Government proposed to construct.

Incinerator

"The Federal Government must get involved and set up such a high-temperature incinerator for all the States to use," Mr West said.

He said that under the ALP plan, an environmental contaminants authority, directly responsible to the appropriate minister, would be established to monitor the disposal of toxic wastes.

Working with the National Occupational Health and Safety Commission, the authority would set up a compulsory and comprehensive licensing system for hazardous chemicals.

Mr West said: "This will involve compilation of a national register of existing and new chemicals and the evaluation of their potential hazards."

"Those chemicals in industrial use will be regulated by the, National Occupational Health and Safety Office.

"National standard procedures for the transport and per-

manent disposal of hazardous chemicals will be developed by the authority.

"This will include a multiple docket system to identify and keep track of these chemicals from their production through to their ultimate disposal.

"NSW and Victoria are the only States where adequate identification and records of waste disposal are kept."

Mr West said constitutional power over corporations, trade and commerce and taxation would enable the Federal Government to take the necessary action.

"Increasingly, industrial, agricultural and domestic chemicals are creating many difficulties relating to their use in the work place, safe transport and disposal, and their long-term health affects on the community," he said.

"The Federal and State Governments have failed to confront this problem."

Mr West said the Federal Government's voluntary notification scheme for new chemicals was inadequate.

"The scheme is not mandatory, cannot cope with the high rate of introduction of chemicals and does not cover existing chemicals," he said.

DROUGHT CUTS VALUE OF GRAIN CROP BY \$300 MILLION

Canberra THE AUSTRALIAN in English 2 Aug 82 p 3

[Article by Alex Greig]

[Text]

DROUGHT has reduced the value of the nation's grain harvest by \$300 million and will strip up to \$130 million for every further 10 days it lasts.

Estimates of this year's wheat crop alone, originally predicted to be 16 million tonnes, have been cut to between 10 and 14 million tonnes.

Spokesmen for farmers and graziers associations in four States say that unless the grain belt gets good rains in the next three weeks, the harvest would be disastrous.

South Australia, Victoria and Western NSW are the hardest hit — drought is affecting up to 75 per cent of dry farming regions.

The secretary of South Australia's Farmers and Stock Owners Grain Committee Executive, Mr Terry Inglis, said as much as 30 per cent of the State's crop was probably lost.

"The northern regions of Eyre Peninsular, large sections of the mid north and the northern Murray Mallee have been badly hit," Mr Inglis said.

"These are dry land farming regions which have been particularly hard hit and even if

rain falls now it is doubtful that many crops in these areas would recover.

"We are looking at a loss of up to \$150 million on last year's figures," Mr Inglis said.

Victoria's northern, southern and east Mallee areas are badly affected with the Victoria Grain and Elevator Board already reducing the predicted harvest from these areas by at least 30 per cent.

Wimmera farmer and member of the Victorian Farmers and Graziers Executive Committee, Mr F.W. Drum, said yesterday large areas in the Mallee had not been sown because of insufficient rains to start the seas and large areas which had been sown had not germinated.

Mr Drum said Victoria's crop would be down 20 per cent this year because of the drought and loss in money terms of \$90 million to \$100 million.

"It will be worse if we don't get these spring rains within the next three weeks," he said.

"I'd say for wheat alone, for every week without rain, the total wheat harvest across Australia will drop up to a mil-

lion tonnes. At \$110 to \$130 a tonne, that's a hell of a lot of money and business confidence down the drain."

West Australia is faring better with an average harvest expected if rains fall within the next few weeks.

Coastal areas in the west as in Victoria, South Australia and NSW are holding up well.

Chairman of the West Australian Pastoralists and Graziers Grain Committee, Mr W.T. Scott, said rain was essential within the next two weeks for the State's dry grain growing areas.

"All of our crops have been late in the eastern part of the wheat belt and it's still possible for a reasonable year provided we get rain in the next fortnight or so," he said.

NSW is suffering badly with 75 per cent of its dry western regions already proclaimed drought affected.

More than five million tonnes of wheat were produced in NSW last year, but this year's harvest will only be a pale shadow of that figure, according to experts.

ENVIRONMENTAL COST OF HUNTER VALLEY INDUSTRY WEIGHED

Sydney THE SYDNEY MORNING HERALD in English 20 Jul 82 p 17

[Text]

FOR some, the new wealth in the Hunter must be weighed against its social and environmental costs.

Until April, the most publicised environmental controversy was the threat to the region's celebrated wine industry from the effect of fluoride emission on the grape vines from the large aluminium smelters.

With the cancellation of the proposed \$640 million Lochinvar smelter, that threat has eased temporarily.

But the wine-makers would rest easier if the site for the proposed smelter, located on the doorstep of the vineyards, was sold.

The Lochinvar smelter proposal was the subject of a government inquiry and local university research.

Late last year, Mr Frank Murray, a Newcastle University researcher began spraying fluoride on some of the grape vines at the George Hunter State Vineyard, Allandale, in control experiments financed by the NSW State Pollution Control Commission.

According to Mr Murray grape vines definitely are sensitive to fluoride pollution. His job is to establish at what levels the shiraz grape variety, (the most common grape vine in the Hunter Valley) is injured by fluoride in the air.

To achieve this Mr Murray has developed a technique not previously used in Australia in which

open-top chambers, 2.5m tall and 3m in diameter, are constructed around the grape vines in a vineyard.

Mr Murray says the conditions within the chambers are practically identical to the conditions of the surrounding vines in the vineyard.

Wines within six chambers at the George Hunter State Vineyard were continually exposed to various levels of fluoride in the air.

The air and grape vines within the chambers were monitored for fluoride concentration, and the plant responses were measured.

The results of this research should be known soon.

But according to Dr Howard Dick, a development economist in the Department of Economics at Newcastle University, in the long run power stations and not aluminium smelters are likely to be the most serious cause of air and water pollution.

In an article published last year in the Current Affairs Bulletin, Dr Dick maintained that coal-burning power stations were dirty plants.

"They admit they emit not only fly ash with substantial fluoride content, but also sulphur dioxide and nitrogen oxide," he wrote. "On contact with water the oxides form acids. The resultant acid rain not only affects vegetation directly but also pollutes the entire water system, with consequences for irrigation, marine life and human beings."

He said the study of the effect of power stations on the region was urgently needed.

The Eraring Power Station now under construction at Lake Macquarie may lead to other environmental problems.

It has been estimated that three times the total volume of the lake will be required to cool the condensers of the power station under normal operating conditions.

The significance of this is in the likely effects on aquatic life of a radical change in water temperature near the power station discharge canal.

While the normal water temperature range of the lake is from 13 degrees Celsius in winter to 28 degrees in summer, water from the station entering the lake has a maximum temperature of 35 degrees.

Mr G. Henry, a marine biologist with the NSW Department of Fisheries, who has investigated the effects of Munmorah Power Station on fish and ponds in the Tuggerah Lakes, has said that 36 degrees seemed to be a temperature threshold for fish.

"If the water temperature rises a few degrees above this level there could be a tremendously harmful effect on fish," Mr Henry said.

Others have little doubt that the new coal mining developments will dramatically change the landscape

of the region.

Open-cut mining has often been criticised as being destructive of the environment although pits are gradually refilled and revegetated.

This is little consolation to farmers who are worried about the effect of coal dust on their yields.

Dairy farming is located principally along the adjacent areas to the major streams and tributaries taking up about 16 per cent of the total agricultural surface in the Hunter.

These farms produce more than 185 million litres of milk each year - half of which goes to the Sydney Metropolitan market.

Housing is the most obvious social problem associated with the recent rapid development in the Hunter.

In particular, the mining towns of Muswellbrook and Singleton have been unable to meet the housing demands caused by the growth and population as a result of the influx of workers who serve the surrounding open-cut mines.

Due to the housing shortage, in Singleton rents are still over \$200 a week and three-bedroom houses sell for between \$85,000 and \$100,000 - extremely high prices for a country centre.

In 1981 it was reported that more than 7,000 people in the Hunter were living permanently in caravans as a result of the housing crisis.

BEACH EROSION LESS THAN THOUGHT, STUDY INDICATES

Brisbane THE COURIER-MAIL in English 20 Jul 82 p 16

[Article by Bill Ord]

[Text]

GOLD COAST beaches are not entirely safe from heavy occasional erosion, but they are much more secure than was thought until very recently.

This is the major message of a report which has just gone to the Gold Coast City Council from the Queensland Beach Protection Authority.

The authority said in Brisbane yesterday it had just completed a "sand transport study" which showed that recent erosion losses on the most vulnerable Gold Coast beaches were a lot less than feared.

But it added this was no reason for complacency.

Its original study of the problem, made about 10 years ago, suggested Gold Coast beaches needed about 12 million cubic metres of sand to replace what had then been lost by natural and man-made causes such as the destruction of dunes for building development.

This figure still stood, but the pumping of 1,400,000 cubic metres of sand on to the Surfers Paradise beach in 1974 and the

later "feeding" of beaches between Currumbin and Tallebudgera, especially at Palm Beach, had blunted the edge of the erosion threat.

But the authority's senior engineer, Mr Hector Macdonald, said yesterday it would be a long and expensive battle to banish the threat in all but the most exceptional of storm circumstances.

"With, say, about another nine to 10 million cubic metres of sand replenishment needed in the long term, the Gold Coast City Council is looking at a bill of about \$20 million to \$30 million at today's prices.

"Still, the outlook, if not the cost, is most encouraging and bears out what the authority has been saying all along: there's no need for panic."

Mr Macdonald said "in no circumstances" must the existing Gold Coast beach dunes system be touched.

TASMANIAN DAM OPPONENTS PLAN BLOCKADE OF BULLDOZERS

Recruitment Campaign

Canberra THE AUSTRALIAN in English 27 Jul 82 p 2

[Article by Peter Dwyer]

[Text]

CONSERVATIONISTS yesterday vowed to obstruct bulldozers in a bid to stop construction of the Gordon-below-Franklin Dam in south-west Tasmania.

The decision has set the stage for a potentially violent clash between workers at the Tasmanian Hydro-Electric Commission and the conservationists.

Responding to the conservationists' promise that the protest would be peaceful, one commission worker said: "There is nothing peaceful about inciting bulldozer drivers to riot."

The commission's official response was that it had legislative approval to build the dam and would expect police protection if there was any attempt to halt building activities.

The director of the Tasmanian Wilderness Society, Dr Bob Brown, left Hobart yesterday on a national drive to recruit volunteers for the sit-in.

Dr Brown said: "I am prepared to take part in the blockade to stop the dam. I am aware of the consequences of that, but they are of small moment when compared to the issue."

"It is not something we take lightly and it is not something we want to do. We are standing up for thousands and millions of people in the future."

Last week bulldozers and other heavy equipment moved into the south-west to begin building a road to the dam site.

The Gordon-below-Franklin hydro-electricity project was successfully legislated for earlier this year after two years of bitter debate in the State.

Conservationists say the Gordon and Franklin Rivers are part of one of the world's last great wilderness areas, and must be saved. They also argue the dam is an economic mistake.

They will hold mass meetings around the nation in September and October to support colleagues participating in the planned protest.

Dr Brown believes hundreds of protesters will continue their stand until work on the project has been halted.

He said yesterday the fact that the Tasmanian Parliament had passed legislation for the dam did not make it the right decision.

He said: "There is national disapproval of this scheme. It is our intention to slow down the work and bring it to a halt. We can stop it and we will."

He gave no exact timetable for the "peaceful confrontation with the bulldozers" but said the protest would begin in the spring and continue until work stopped.

Police Counteraction Plan

Canberra THE AUSTRALIAN in English 28 Jul 82 p 3

[Article by Peter Dwyer]

[Text]

POLICE in Tasmania are preparing a secret strategy to prevent protestors blockading bulldozers involved in the building of the Gordon-below-Franklin dam in the south-west of the State.

The strategy is being prepared in consultation with the Hydro Electric Commission, which will build the dam, and the Tasmanian Government.

The preparation of the strategy was confirmed yesterday by the Tasmanian Premier, Mr Gray, who described plans to attempt to stop the dam as outrageous.

Mr Gray said conservationists who on Monday vowed to stop the bulldozers were planning to break the law and would have to face the consequences.

He said: "These people are being deliberately provocative and irresponsible. They are moving to set up a situation where, unless there is restraint on the part of all Tasmanians, there is a risk of injuries."

Mr Gray would not say whether a declaration of a state of emergency in Tasmania would be part of the strategy and would not say what other action he, the HEC or the police were considering.

On Monday the director of the Tasmanian Wilderness Society, Dr Bob Brown, foreshadowed the blockade in a bid to save from flooding what

conservationists say is one of the world's last great wilderness areas.

Mr Gray said the police would have the responsibility of protecting all involved in any confrontation near the dam site and to prosecute anyone they considered had broken the law.

"They will do what they can to ensure that there is no violence. I know that the HEC employees will show restraint and expect all others to show similar restraint," he said.

"We are not going to allow anyone to obstruct the progress of work on this dam. Delay in getting on with it has already cost 8000 jobs in this State.

"We are not going to allow people to lie across the paths of bulldozers. Action to stop the HEC from carrying out what is its legislative right would seem to me to be outside the law."

Mr Gray said he doubted if Dr Brown would get the support he needed for the blockade even within Tasmania.

He rejected claims by Dr Brown that the State could not afford the dam.

Instead, he accused Dr Brown of conducting a dishonest campaign throughout Australia to discredit a power development which "has the support of a vast majority of Tasmanians and is vital to the economic well being of this State".

Police Attack on Gray

Canberra THE AUSTRALIAN in English 29 Jul 82 p 3

[Article by Peter Dwyer]

[Text]

TASMANIAN police are annoyed at comments made by the State Premier, Mr Gray, which they fear will provoke violence between conservationists and dam builders in south-west Tasmania.

They are seeking a meeting with Mr Gray to ask him to "lay off" and allow the police to handle any clashes in their own way.

The comments at issue were made by Mr Gray in response to a decision by conservationists to block work on the controversial Gordon-below-Franklin hydro-electric dam.

Mr Gray said on Tuesday the conservationists were being provocative and irresponsible.

"They are moving to set up a situation where, unless there is restraint on the part of all Tasmanians, there is a risk of injuries," he said. "We are not going to allow anyone to obstruct the progress of work on this dam."

But the secretary of the Police Association of Tasmania, Mr Graham McDermott, yesterday accused Mr Gray of being "as provocative as the greenies".

He said: "He would have been better just laying off because by coming out and say-

ing things like that, these people are going to go around there and arm themselves with baseball bats or something as stupid.

"If he just played it cool they'd just lay in front of the bulldozers for a while, get sick of it, and go. When you get the Premier saying things like this you are going to get the conservationists up-tight anyway."

Mr McDermott said Mr Gray was probably reading too much into the situation and the police would rather be left to monitor the situation before deciding on any action.

He confirmed a statement by Mr Gray that the police were preparing a secret strategy to prevent the blockade.

Mr McDermott said: "I think you should take one step at a time and I think most of these people who are concerned about the dam are also pretty responsible."

"Even though the greenies have got a bit of a bad name, I don't think they want to get into brawls."

"For that reason I think that any build-up to some sort of confrontation of this nature is probably doing more harm than good."

CSO: 5000/7563

NEW TECHNIQUE AIDS TRACKING OF INDONESIAN VOLCANIC ASH

Perth THE WEST AUSTRALIAN in English 22 Jul 82 p 3

[Text]

A BREAKTHROUGH by Australian scientists will enable the Indonesian volcanic ash cloud to be tracked for longer.

The ash is difficult to detect on weather satellite photographs once it mixes with the normal cloud.

It can still be dangerous to aircraft in that state.

But, a joint CSIRO and WA Institute of Technology project has designed a technique to isolate the volcanic ash.

The CSIRO team leader, Dr F. Honey, said computer analysis of weather satellite photographs had located the ash.

It had taken two days of intensive work by the teams, he said.

He said the equipment for receiving the satellite information

was at the WAIT campus at Bentley and was the only one of its type in Australia.

It has been used in the past 12 months to determine features of the ocean, cloud and land, such as sea temperature, currents, different types of cloud, rock types and forests.

At the request of the Department of Aviation, studies to isolate the volcanic ash cloud were started last week.

The method would be perfected to provide immediate analysis of the satellite photographs when eruptions occurred, Dr Honey said.

Refinement

The Department of Aviation regional di-

rector in Perth, Mr E. Kiel, said comprehensive information was provided by the Bureau of Meteorology on the volcanic ash clouds.

This was a refinement of that service, he said.

Two international airliners have been disabled by the ash clouds in the past month.

When the cloud moved across the WA mainland, aircraft were rerouted to avoid it.

The Department of Aviation has sent an officer to Indonesia to help the authorities in their reporting techniques.

CSO: 5000/7562

STRUGGLE TO PRESERVE QUEENSLAND RAINFORESTS REVIEWED

Canberra THE AUSTRALIAN in English 23 Jul 82 p 23

[Text]

OF THE many people and groups who register complaints against the property development industry, one of the most tenacious is the Australian Conservation Foundation.

Through its numerous associate organisations, such as the Queensland Conservation Council, the foundation often faces a tedious legal, and sometimes face-to-face, battle against all those involved in the development sphere — developers, financiers, local authorities and government departments.

Despite the name-calling, "eco-nuts" are working sincerely for the future rather than the present.

A building can quite justifiably — depending on its age and value — be converted into so much rubble and then be replaced.

A rainforest takes a good deal longer to grow — to obliterate such an environmental monument should only be the action of desperate necessity.

Fortunately, Australia does not have the population or the lack of space to have to resort to such action.

Unfortunately, the statistics reveal that, since the advent of white settlement

in Queensland, more than 60 per cent of the State's rainforests have been destroyed.

The remainder hangs in a very delicate balance that is gradually being outweighed as developers and individual owners, in search of an easy dollar, incessantly gnaw away at the forests.

The Queensland representative of the Australian Conservation Foundation and a rainforest specialist, Mr David Allworth, said the foundation and its associated councils stood at least a chance of saving something if the forests were being attacked in large quantities.

"But these persistent nibbles at the forest can be the real killer," he said.

Destruction

"That sort of action has the insidious characteristics of a cancer, slowly but effectively eating away at the scrap we have left."

The foundation's latest, and most ardent, stand is against the mass destruction of the lowland rainforests of Cow Bay between Daintree River and Cape Tribulation in far northern Queensland.

According to Mr Allworth, the Cape Tribulation and Cow Bay region is the last big rainforest region still standing.

He said the lowland forests were the most diverse and complex growths in the world and to date more than 90 per cent of Queensland's supply had been felled.

Early last year the Cow Bay region was subjected to a sub-division application from a local development firm, Southedge Daintree Pty Ltd, which considered the destruction of almost 1000ha of forest to make way for the production of rural residential allotments.

The responsible local authority, the Douglas Shire Council, had designed a town plan which excluded rural residential development.

A representative of Southedge, Mr George Quaid, registered an objection to the town plan with the Local Government Department and the plan was subsequently altered and gazetted in June last year.

Mr Allworth said the department agreed with the council's exclusion, but the minister, Mr Russell Hinze, had intervened to reinforce the objection and the result was an insensitive grid pattern development.

Mr Allworth said: "Our most productive line of approach now is to persuade individual owners to preserve their land."

"Unfortunately many of the owners are absentee land holders and appear to be mainly speculators, waiting for the top prices."

"The other problem with the development is that there has been no provision for services, no rubbish dump or recreational facilities and the local council does not have the required funds for water or sewerage, so consumers should be warned."

"But the most frightening aspect is that a minister's intervention is able to override public objection," Mr Alworth said.

Submissions

"The council had originally voiced its bitterness towards the company's objection, but about a month later it was over-ruled and eventually fell into line with the Cabinet directive."

"But even now the council is capable of alleviating the situation by enforcing a more sensitive development as the various approval submissions come up," he said.

The statistics point to a sad future for the State's environment.

Of the State's total 1.7 million sq km area, only 0.6 per cent is rainforest. About 90 per cent of the State is arid to semi-arid country, indicat-

ing the need to preserve what growth is there.

In 1980 the Government declared 14,000ha of the Cape Tribulation region a national park, of which only a tiny portion was the valuable lowland forests.

In comparison, the Cape Park is only about twice the size of the Mt Kosciuszko National Park — a pitiful effort considering the enormity of Queensland's Cape region.

And although more than half has been lost, about 33 per cent of the remaining lowland forests has been degraded through intensive logging activity.

The Australian Conservation Foundation's national council, based in Melbourne, has registered its opposition to the development proposal with the Queensland Government and has also called on all Queensland shire councils to stop further subdivision of rural residential zoning.

A foundation councillor from northern Queensland, Mr Bill Sokolich, said the Cow Bay area contained one of the last areas of such rainforest in Australia.

"The local council, under pressure from Russ Hinze, is allowing it to be hacked to pieces as if it had no other value than short-term real estate sales," he said.

DESTRUCTION OF NATURAL FOREST FOR GOVERNMENT PLANTING ASSAILED

Canberra THE AUSTRALIAN in English 26 Jul 82 p 3

[Text]

THE replacement of native forests with government-controlled pine plantations has been criticised by one of the country's most respected ecologists.

The curator of vertebrate ecology at the Australian Museum in Sydney, Dr Harry Recher, said the often-indiscriminate clearing and replanting program was a matter of grave concern.

By the year 2000, there would be more than one million hectares of pine plantations, mostly controlled by State forestry commissions. So far, there were 500,000 hectares, with 30,000 hectares being planted each year. Extensive areas of native forest were threatened with extinction.

Dr Recher said: "We have already planted more than we need for Australia's self-sufficiency. They are now thinking about an export industry. Where will it stop?"

More than half of the original forest had been cleared for agriculture and urban devel-

opment, making the remaining natural forest a precious resource.

"Compared with other countries, Australia has little forest. For instance, 32 per cent of the United States was forested, 44 per cent of Canada, and 22 per cent of New Zealand but only 5 per cent of Australia.

"The conversion of hundreds of thousands of hectares of forest to pine plantations is therefore a matter of concern."

Clearing of native forest and planting of pines meant most plants and animals in the forest died.

The decision to speed up the pine-planting program was made in the 1960s, based on projected population growth over the next 40 years, with the aim of providing enough softwood to meet increasing demand.

It was now clear the population was not increasing at the expected rate, and that the ever-increasing production of timber was unnecessary.

CSO: 5000/7562

PROFESSIONAL GROUPS URGE NSW GOVERNMENT TO SPARE RAINFORESTS

Sydney THE SYDNEY MORNING HERALD in English 2 Aug 82 p 12

[Article by Joseph Glascott]

[Text]

The Joint Professions Standing Committee on the Environment has called on the State Government to preserve all rainforests and buffer forest zones in NSW, "absolutely and without compromise."

The committee represents five influential bodies, the Royal Australian Institute of Architects, the Royal Australian Planning Institute, the Royal Australian Institute of Parks and Recreation, the Australian Institute of Landscape Architects and the Association of Consulting Engineers of Australia.

It has made its views of rainforests known in a submission to the Premier, Mr Wran.

The submission has been made while a State Cabinet sub-committee under the chairmanship of Mr Wran is attempting to formulate a Government policy on rainforests.

The chairman of the Joint Professions Committee and president of the Institute of Landscape Architects, Mr Bruce Mackenzie, said yesterday the committee believed it would not be enough to protect only the pure areas of soft-

wood rainforests, the rainforest as defined by the Forestry Commission.

The adjoining wet sclerophyll eucalypt forests was often inter-related with the rich flora of the rainforest. An attempt to preserve the rainforest while harvesting the marginal rates would be untenable.

The committee's submission said the tropical rainforests of NSW offered an incredible luxuriance of vegetation, emotive images of tropical splendour, a reassuring sense of the perpetuity of nature and sheer exuberant visual pleasure.

The committee said the Forestry Commission and sawmillers were confident that the logged forests with proper management would in time regenerate and be indistinguishable from the original.

Many other authorities questioned this view.

"They key factor in regeneration is time," the submission says. On the Forestry Commission's own estimates it would take 50 to 70 years for minimum logging conditions to return.

Therefore in the best circumstances a human lifetime would expire and at the beginning of the post-logging state the log forest would be excessively ugly.

For regeneration of the forest to bigger trees, it could take 100 to 250 years.

"It is sobering to realise that the time period since Governor Phillip's arrival in Botany Bay is not yet 200 years — the entire history of British and Australian society on this continent," the submission said.

"The time for rainforest trees to regenerate to genuine maturity cover in many cases is 1,000 years or more."

"The change brought about by logging which bares the structure of the rainforest to light, heat, draught and cold can be initially devastating to the remaining trees."

Mr Mackenzie said the remnant sub-tropical rainforests of eastern Australia were less disturbed than similar forests in South-East Asia and other parts of the world where nomadic peoples have used them for years.

Police arrested 12 protesters for obstruction at a logging operation in the Night Cap Forest near Lismore last Thursday and Friday.

Conservationists have been calling for creation of a national park for 40 years in the Night Cap ranges of Wian Wian State Forest.

The deputy director of the Total Environment Centre, Mr Jeff Angel, said yesterday that the arrests were the result of having no rainforest policy in the State.

AUSTRALIA

BRIEFS

LOGGING ISSUE--Maroochydore--Conservationists are renewing protests over logging of Conondale Range forests after learning that the Forestry Department knows little about what will happen to the wildlife. The issue has been simmering on the Sunshine Coast since the Conondale Range Committee, an environmental group, sought to save the 5000 ha Booloumba Creek catchment. Logging has already started on two areas in the catchment and the committee now is trying to save about 1000 ha of virgin forest in the Bundaroo Creek section. The Premier, Mr Bjelke-Petersen, has guaranteed that more than 800 ha of the Booloumba Creek catchment will be preserved as a beauty spot and that 50 percent of the Bundaroo area will not be logged until the results of a fauna study, expected to take at least three years, are known. But the committee secretary, Mr Richard Giles said yesterday he was concerned at the department's ability to "recognise wildlife values." Mr Giles said the department admitted knowing little about the effects of Conondale logging on fauna. The Gympie District Forester, Mr Peter Cranny, confirmed this yesterday. He said no area impact study had been conducted and the department's zoologists had not fully investigated environmental effects, if any, caused by logging. Mr Cranny said Conondale logging had been underway since the "turn of the century" without major problems. The department's forest regeneration program was successful and most species appeared not to be harmed. "Obviously, the fauna study could affect the logging path," Mr Cranny said. "If logging is shown to have significant adverse effects on any wildlife, our logging operations will be modified." [Text] [Brisbane THE COURIER-MAIL in English 21 Jul 82 p 13]

SEWERAGE POLLUTION OF RIVER--Effluent from the Horsham Sewerage Authority treatment plant has heavily polluted the Wimmera River, the Environment Protection Appeals Board has ruled. In a report tabled last week, the board directed the authority to stop the discharge of waste water into the river by 31 December 1985. [Text] [Melbourne THE AGE in English 22 Jul 82 p 3]

ANTI-EROSION PROGRAM--Noosa Shire will make a major effort this year to stop serious erosion of its beaches. In adopting a \$29 million budget yesterday the shire council agreed that between \$700,000 and \$750,000 be spent on trying to solve the erosion problem at Noosa Heads and main beach. The shire chairman, Cr Bert Wansley said the aim was to keep sand in the beach area which is continually being washed away. Cr Wansley said it is

hoped the work will be completed by Christmas. The project will be funded by the council with a 25 percent State Government subsidy. [Excerpts] [Brisbane THE COURIER-MAIL in English 22 Jul 82 p 2]

BRISBANE PORT DEVELOPMENT--Australia's largest company, BHP has been beaten for control of a vital piece of land at Brisbane's new port by a private company, according to confidential State Government documents revealed yesterday. Release of the documents is certain to create a new political brawl between the State Government and the Port of Brisbane Authority. The documents show that State Cabinet has given precedence to development of a tourist complex, including a marina, over a BHP proposal for a ferro-manganese plant. The plant would have created 400 new jobs and caused a substantial increase in port trade. Instead, the land will be developed by Prospect Marine Pty Ltd which will also control a public road and a popular boating passage. Centre of the dispute is an 84.7 ha piece of land on the western side of Fisherman Islands where the \$50 million replacement Brisbane port is being developed. The Opposition special projects assistant, Mr Tom Burns, released the documents to the Courier-Mail yesterday. Mr Burns said the documents revealed that State Cabinet had made a scandalous decision. One of the documents shows that the Cabinet on July 15 rescinded a decision it had made two days earlier--thus allowing control of the land to go to Prospect Marine for development as a marina-boatel-tourist complex. The Port of Brisbane Authority supported the BHP proposal. [Excerpt] [Brisbane THE COURIER-MAIL in English 22 Jul 82 p 3]

ANTIHERBICIDE ORDER--A Kwinana factory producing herbicide containing the chemicals 24D and 245T has complied with a Government order to stop discharging liquid waste into an open pit. Chemical Industries (Kwinana) Pty Ltd was given 30 days' notice on June 9 to temporarily inject effluent through a bore into the lower layer of unusable salt-water aquifer while a more satisfactory method of disposal was developed. The order was extended while exploratory bores were monitored at the plant. A spokesman for the Metropolitan Water Board said yesterday that a bore had been completed. [Text] [Perth THE WEST AUSTRALIAN in English 23 Jul 82 p 25]

FODDER-TREE EXPERIMENT--A new project initiated by Department of Agriculture officers at Manjimup will examine the benefits of fodder trees for agricultural production in WA. The Minister for Primary Industry, Mr Old, said yesterday that the aim of the trial was to examine the effect of trees on the health of sheep and on salinity control. The Manjimup district office, with aid and funding from the department's resource-management division, had begun a big-scale tree-planting trial involving 68 hectares on the property of Mr Arthur Ettridge and Sons at Bokerup, about 80km east of Manjimup. The trial site consisted of a significant proportion of a catchment area which had salt areas on the valley floor. Because of the salinity problem, salt-tolerant plants were selected for establishment on the flat. More than 10,000 cuttings of evergreen and deciduous species of tamarisk were planted on mounded rows at 10-metre intervals. The evergreen variety was planted on less saline areas which had supported a sea barley-grass stand and the more salt-tolerant deciduous variety was planted in the salt-scald areas.

Puccinellia and clover species were sown between the mounds. The white-flowering tree lucerne was seeded in double rows one metre apart in belts at 20-metre intervals on the slopes adjoining the flats. [Text] [Perth THE WEST AUSTRALIAN in English 26 Jul 82 p 19]

CATCHMENT CLEARING --Total compensation paid by the State Government to farmers affected by clearing controls in South-West catchments had exceeded \$16 million, the Minister for Works and Water Resources, Mr Mensaros said yesterday. Controls over clearing were introduced in 1977 on a number of water-supply catchments and water reserves because the clearing of native vegetation in certain South-West areas had left land and streams salty. Since 1977-78, \$8.5m had gone in cash payments to 80 property owners to compensate them for land which they continued to own but were not allowed to clear, he said. A further \$7.6m. had been spent in the outright purchase of 47 properties. There was also an active reforestation programme in operation on the Collie River catchment. So far this had involved planting about 19 square kilometres of cleared land with selected eucalypt varieties. The Wellington reservoir which provided water for irrigation and domestic supplies, was located on this catchment. The aim of the reforestation programme was to reverse the problem of increasing stream salinity and improve water quality in the reservoir. [Text] [Perth THE WEST AUSTRALIAN in English 26 Jul 82 p 26]

SMLTER EFFECT ON ENVIRONMENT--Construction work on the Alcoa aluminium smelter at Portland has already taken a heavy toll on native wildlife and vegetation, conservationists claim. The rare Meliblom's spider orchid which is native only to wet heathland in the Portland area is thought to be extinct and the southern-emu wren and native heath rat are also endangered. The former convenor of the South-west Alcoa Action Group, Mr Chris Smyth said the animals were unlikely to survive destruction of their habitat after the heathlands were levelled to begin construction work. "There was talk of transplanting sections of heathland prior to construction, but little appears to have been done," Mr Smyth said. "The heath was burnt and the top soil scraped and deposited at another site in the hope that this would generate new heathland, but it doesn't appear to be working. It's just a harbor for weeds." A Portland field naturalist, Mr Cliff Beaglehole, said 240 species of native flowering plants, including the rare orchid, had been cleared from the Point Danger headland. Although there were plans to raise the orchid from seed, the plant was virtually extinct, he said. "It's hard to imagine where these plants could be re-established. They can't be replanted in national parks because they would be an introduced plant--a foreigner to existing park habitat," he said. Mr Beaglehole said construction work for the smelter had wiped out a unique coastal ecosystem. "There is no way Alcoa should have come here," he said. [Text] [Melbourne THE AGE in English 20 Jul 82 p 7]

CSO: 5000/7563

CHITTAGONG LOGGING, CULTIVATION ADD TO EROSION

Dacca THE BANGLADESH OBSERVER in English 12 Aug 82 p 1

[Article by Syed Murtaza Ali]

[Text] Chittagong, Aug 11--The continued process of indiscriminate logging and thereby shifting of cultivation site on the slopes of the entire belt of the Chittagong Hill Tracts by the local people causes a loss of forest resources worth about Taka 50 lakh a year.

This also contributes to erosion and flash floods. This means of agriculture is locally termed as 'jhoom' cultivation.

The local people cut and burn trees on the slopes in particular to facilitate the cultivation of paddy and other crops. They are nomadic in their attitude in selecting the site of cultivation season-wise.

'Jhoom' cultivation reduces the fertility of the soil in one hand and helps the process of erosion on the other by spoiling soil nutrients.

The retaining of soil in granular condition by plant roots become difficult with the destruction of forests. The plant roots effectively prevent erosion and flash floods as the soil exercises a considerable influence on stream flow. This is one of the reasons that rain waters easily erode uncovered surface soil and reduce the fertility of hilly areas.

There are also cases of logging by unscrupulous persons in the forest areas of Chittagong Hill Tracts. They usually cut the costly varieties of trees and sell them out in black market.

The Forest Department recently introduced a new technique for afforestation of denuded hills of unclassified state forest. About one hundred acres of unclassified state forest were brought under soft food plantation at Tinunia of Jhoom division of Chittagong Hill Tracts. The plant under this technique attained a height of ten inches in ten months.

Experts say that jhoom cultivation should be streamlined to minimise deforestation. The benefit to jhoom cultivators must be ensured but at the same time the adverse effects on forests must be curbed.

CSO: 5000/7084

MONITORING OF INDUSTRIAL EFFLUENTS PROPOSED

Calcutta THE STATESMAN in English 8 Aug 82 p 9

[Text]

DURGAPUR, Aug. 8.—In the "comprehensive pollution survey and studies of the Ganga river basin in West Bengal", recommendations have been made for arranging monitoring of industrial effluent quality, collecting of samples by the State Water Pollution Board and making laboratory examination.

According to another recommendation, water hyacinth has the capacity of absorbing certain metallic pollutants and so may be tried in the low cost waste treatment plants. "Initial investigation at the Banaras Hindu University has indicated that the charcoal thrown into the Ganga water from the innumerable burning ghats has the capacity to absorb coliform organisms and arsenic. This accelerates the process of self-purification of the river water. Hence the feasibility of using charcoal in treatment plants may be examined."

The Central Board for the Prevention and Control of Water Pollution has set up a number of sampling stations for "wet" study. They cover the entire length of the Ganga in the plains, where the responsibility for the collection and analysis of the samples of water every month has been entrusted to the relevant State Prevention and Control of Water Pollution Boards.

In West Bengal, there are nine stations at Farakka, Berhampore, Katwa, Nabadwip, Kalyani, Palta,

Dakshineswar, Ulubaria and Diamond Harbour, where the wet study is continuing round the year. Results of the West Bengal boards water sample analysis indicate that the biochemical oxygen demand in the Bhagirathi segment is below the tolerance limit. In the Hooghly segment the figures are rather confusing.

While Palta's is the highest figure in relation to the biochemical oxygen demand—2.4 and Ulubaria 3.5 the figure for Kalyani is 13.5, Dakshineswar 41.5 and Diamond Harbour 30. The survey mentions about the scope for further improvement in collecting the data.

As the stagnancy of water on farm lands for producing more paddy for transplantation may enhance the pollution of shallow level ground water through increased percolation of dissolved farm chemicals and coliform organism, a few deeper tubewells are to be sunk in the villages exclusively for drinking purposes. Discontinuation of the use of toxic organochlorine pesticides has also been recommended to check water pollution.

FOREST BOARD ENDORSES PROPOSAL TO REVISE POLICY

Madras THE HINDU in English 9 Aug 82 p 10

[Text] The Central Board of Forestry at its special meeting here yesterday endorsed the Government proposal to revise the national forest policy and the broad framework of the proposed change, aiming at giving the utmost importance to the protection of the existing forests.

According to official sources, the board recognised the need to raise forests in the Government, community, private and public sectors to meet the requirements of fuel, fodder and forest-based industry, consistent with the welfare of the people living in and around the forests.

The basic direction of the policy, however, would be to ensure primarily the preservation of environmental and ecological balance and then only the derivation of economic benefits.

The meeting, presided over by the Union Minister of Agriculture, Rao Birendra Singh, was attended by the Chief Minister of Goa, Daman and Diu and the Forest Ministers of States and Union Territories.

It was convened in the wake of opposition to some of the provisions of the proposed legislation amending the Indian Forest Act, from social scientists on the ground that the tribals who lived on the forest resources would be affected.

Tamil Nadu's Reservations: Mr R.M. Veerappan, Tamil Nadu Minister for Information, Religious Endowments and Forests, has expressed the strong opposition of the State Government to any "divesting" of its authority by the proposed comprehensive Central legislation on forests and wildlife to include these subjects in the Concurrent List.

Mr Veerappan, speaking at the meeting said that Tamil Nadu had stringent laws on the possession and transport of sandalwood and other scheduled timbers. In the absence of similar or comparable legislation in other States, the administration of the Tamil Nadu Act and rules becomes "sub-optimal." "It is in such areas," he said, "that the Central Government would have to resort to its powers to bring about a measure of uniformity in the laws of a State in a particular region."

He suggested to the Central Board of Forestry that a separate department of forestry and environment at the Centre manned by officials and environmental experts should be created. The Forest Service should be made a fully "uniformed service" with legal powers of enforcement at all levels, he said.

Special Interests of States: The Tamil Nadu Minister suggested wattle bark be included under forest produce since it is found in abundance in Tamil Nadu and effectively utilised. The list of scheduled timbers should be made more exhaustive. More stringent punishment for the theft of sandalwood is necessary. "While Tamil Nadu has an effective statutory framework to prevent the theft and illegal possession of sandalwood, our efforts will bear fruit only if the neighbouring States also adopt similar legislation," he said. The State Government has sent its comments on the proposed Indian Forest Act and he was sure that the special interests of each State would be protected in the new act.

Mr Veerappan again urged the Centre to lift the ban on export of sandalwood as the ban had a crippling effect on the State's forest budget.

Centre's 'Threat' to State Officials: The Minister objected to a communication addressed to the Forest Secretaries of the State Governments by the Inspector-General of Forests (Central) "containing a threat that disciplinary proceedings would be taken against the State Government officers if they passed any order involving "disreservation of forests" or transfer of forest lands against the provisions of the Act." "I wish to state," he said, "with all the emphasis at our command that such an open threat to the civil servants in the State, carrying out their duties under the orders of the State Government, is unfortunate. A direction of this nature is designed to cause a rift between the State Government and their civil servants because the civil servants, carrying out the orders of the State Government are sought to be penalised for their action on the basis of interpretation by the Government of India.

Deputations Abroad: Mr Veerappan also objected to the prevailing procedure in the matter of deputing personnel abroad for training and participation in seminars. At present the Centre makes the final selection. "The State Governments are the best judge of who would benefit most by such visits."

Mr Veerappan added there was no need for the monitoring of State working plans on forestry by the Centre. "Apart from the practical difficulty there appears to be no need for such a move since the State Governments have enough expertise and experience to do this job and are better suited for it."

UNI reports:

The Kerala Forests Minister, Mr K.P. Nooruddin, urged the Centre to drop the proposal for centralisation of the working plans of all forest divisions.

He said decentralisation of working of the forestry operations was essential for greater efficiency and best results. It was, therefore, necessary to leave the finalisation of working plans to the State Governments, he said.

CSO: 5000/7083

BRIEFS

ENVIRONMENT COMMISSION REPORT--Wellington (Press Assn)--The Commission for the Environment has disclaimed its role as a rallying point for opposition to specific projects. In its annual report to Parliament yesterday, the commission said its real job was to identify ways to reduce or eliminate the environmental impact of projects and policies. The commission said it was careful in its study of public submissions not to interpret its audit of projects as a form of public opinion survey. "Even if all those making submissions have a clear position against a project, the commission's job is not to draw up a scorecard. The commission's public role is sometimes seen as a rallying point for opposition to a given project or a given policy. This is not the case." An analysis of the public submissions received by the commission also raised the definition of "environmentalist," the report said. In practice, submissions came from a widely representative group of citizens with genuine concern for features of the environment they valued, and from public institutions with statutory or other responsibilities. "These submissions often contain valuable knowledge about the microenvironment of a project which could assist the decisionmaker to choose the best engineering or design option." [Text] [Auckland THE NEW ZEALAND HERALD in English 28 Jul 82 p 5]

CSO: 5200/9076

EDITORIAL ON ENVIRONMENTAL POLLUTION, OUTPUT

HK260856 Beijing RENMIN RIBAO in Chinese 22 Aug 82 p 1

[Editorial: "Closely Combine Environmental Protection With Production Development"]

[Text] A good living environment and natural surroundings are signs denoting a country strong and prosperous, a happy life for the people and social civilization. After nearly 10 years of efforts, and in particular, since the 3d Plenary Session of the 11th CPC Central Committee, great achievements have been made in environmental protection. However, due to the long-term incorrect understanding of the importance of environmental protection, we never took this into consideration when conducting industrial production and construction. Most of the factories have not adopted technical preventive measures against pollution. As a result, environmental pollution and the destruction of living things have reached an acute stage. This should arouse our close attention.

While developing production, we should pay attention to environmental protection. We can develop production by doing a good job in environmental protection. It is wrong to only take present production needs into account by disregarding the pollution and destruction of the environment and developing production at the expense of the environment. We should consider both production and living things and we should closely combine environmental protection with production development.

Industrial pollution must be dealt with. However, at present, due to financial difficulty, the state cannot allocate large funds for this purpose. To prevent pollution, we should proceed in all cases from the national situation, and persist in the policy of self-reliance and the principle that those who contaminate the environment will bear the responsibility of handling the pollution. We should principally rely on the forces of the industrial departments and enterprises, and exploit their potential so that they can resolve the pollution problem themselves. It is not necessary to spend a lot of money on the pollution problem so long as we can take preventive measures earlier. But it will cost even more money and the problem will be more complicated if we delay in solving the pollution problem. One of the main reasons for industrial and enterprise pollution resides in enterprise maladministration.

Enterprise readjustment should include the following measures: strengthening environmental administration and control pollution. This is an important sign for inspecting the results of readjustment. Environmental administration should be a link in the chain of enterprise management and the production process. We should do a good job in environmental protection while we are carrying out industrial production. It is necessary to establish corresponding organs to take charge of environmental protection, set up economic responsibility systems, implement responsibility systems for managers and chief engineers who take charge of the environmental protection of the enterprise, explicitly stipulate the economic responsibility for environmental protection which the enterprises bear for society and the staff and workers for the enterprises, link

responsibility, rights and interests with the environmental impact of the enterprises, and decide on awards through points and discussion based on production and economic results.

In China, most of the enterprises have outdated technology and equipment, which causes high consumption of resources and energy and various forms of waste. To carry out technical reform in the existing industries and enterprises constitutes an important policy for national economic construction, and is also an effective way to deal with industrial pollution. All enterprises and departments responsible for the work must strive to prevent pollution by taking this as an important goal in achieving technical reform. They must actively make efforts to solve the pollution problem by reforming technology and renewing equipment. They must raise efficiency while making use of resources and energy and convert them to produce to the maximum. They must pay special attention to raising the level of comprehensive utilization, adopt recycling measures, break down the boundaries between enterprises, practice indiscriminating application among factories and salvage useful materials from the three wastes (waste gas, wastewater and industrial residue). They should carefully ensure that the three wastes are technologically exhausted, and meet the state's exhaust standards.

Many areas of the country are seriously polluted and this is mainly due to irrational industrial planning. While carrying out industrial readjustment and reform, industrial plans should be correctly arranged according to general urban plans. Construction of all factories and enterprises should be based on urban characteristics, correspond to urban development, and be limited by the urban environmental conditions. We should strictly carry out the measures for protecting the environment; these measures should be simultaneously designed, built and put into operation together with any key projects. It is forbidden to indiscriminately build or rebuild and extend a factory. In the future, enterprises and institutions that pollute the environment may not be built in densely populated areas and in the protected areas of river headwaters as well as in scenic and sightseeing spots. Some enterprises, which are irrationally planned, seriously pollute the environment or are difficult to deal with, must be resolutely closed or moved out according to specific conditions. In reorganizing industry along specialized lines, we should gradually set up specialized cooperative centers for the different trades. We should concentrate the separate factories which pollute their surroundings in order to centralize management of the "three wastes" and to raise productivity. Urban factories are absolutely not allowed to shift pollution-causing production to the commune and brigade enterprises, which lack preventive measures against pollution.

The prevention of industrial pollution, and the protection and improvement of the environment, are closely related to all economic fields as well as all industrial departments. Governments at all levels should put this matter on the agenda and strengthen leadership over it. All departments concerned should take concerted action, go deep into the realities of life, make investigations, sum up experiences, make overall planning, coordination and supervision, and help enterprises solve the problem of environmental pollution through various means.

To protect and improve the environment is an important task for developing the national economy and society. It is a component part in creating material civilization and socialist spiritual civilization. We should resolutely adhere to the decrees and stipulation of the state, go into action, promote prevention work concerning pollution, rapidly reverse the serious trend of industrial pollution and strive to achieve coordinated development in industrial construction and environmental protection.

CSO: 5000/2160

CRISIS SITUATION GRIPS COASTAL WATERS ECOSYSTEM

Cebu City VISAYAN HERALD in English 3 Aug 82 pp 3, 4

[Article by Feliciano H. Magno]

[Text]

Manila (Depthnews) — Marine productivity of the country's near-shore coastal waters is now in crisis situation because of unabated destruction of the supporting ecological system.

Some parts of the coastal waters have become virtually devoid of marine life, and the day is not far off when the other parts will meet the same fate, warned two aquaculture experts of SEAFDEC.

SEAFDEC translates into the Southeast Asia Fisheries Development Center. It is based in Tigbuan, Iloilo, and was set up to help nations in the region improve their fishery industry.

In a paper presented to the recently held national conference on natural resources conservation, Flor Lacanilao and Adam Young called for proper management of the country's coastal zone resources on a crash basis.

They drew attention to the fact that environmental degradation continues to erode the productivity of the near-shore waters.

The experts cited two management options to arrest the crisis:

- Imposition and enforcement of mandatory restrictions on municipal and commercial fishing through minimum mesh (net) size regulations, closed seasons, catch quotas and fishing area restrictions.

- Reducing the fishing pressure on the coastal waters by developing alternative means of livelihood for municipal fishermen such as captive fisheries in the form of mariculture and seafarming.

Ms. Lacanilao and Mr. Young attributed the destruction of the coastal waters' ecological support system to "irrational utilization of mangrove forest deforestation of watersheds, mining and disposal of mine tailings, reclamation projects, industrial and domestic pollution, and other human activities related to economic progress and human settlements."

They stressed that dwindling productivity of the coastal waters comes at a time when the country is embarked on a campaign to raise domestic fish production to attain self-sufficiency.

Citing latest statistics from the fisheries bureau, the experts said Philippine fish production in 1980 totaled 1,672,000 metric tons or 5.7 percent more than the 1979 national catch. However, the 1980 outturn was 58,000 metric tons below the projected effective domestic demand and 77,000 tons short of the target production.

Mangrove swamp forests, coral reefs and estuaries and bays make up the ecosystem of the coastal waters. The system has taken a terrific beating through the years and continues to do so, reported the experts.

Mangrove forests measured from 400,000 to half a million hectares in 1920.

CSO: 5000/5803

REPORTAGE ON PROTECTED WILDLIFE AREAS IN COUNTRY

Havana BOHEMIA in Spanish 23 Jul 82 pp 90-91

[Article by Alfredo Nieto Dopico from science and technology section of BOHEMIA, "Panorama," editor H. Nunez Lemus]

[Text] Nature conservation is a system composed of social, socioeconomic and technico-production measures implemented within the limits of a nation or on an international scale and which are aimed at sensible utilization of typical or rare natural resources or those that are becoming extinct as well as at protection of the environment against destruction and pollution.

Therefore, conserving natural resources does not mean ceasing to use them, but organizing their judicious utilization so that they are not exhausted and are used in a perfectly sensible and efficient way.

It has been since the revolutionary victory that the indispensable socioeconomic premises have been produced in Cuba for the new state, representative of the interests of the entire society, to tackle the tasks of nature conservation as part of the gigantic effort that is being made throughout the country on behalf of development.

All ecological factors constitute the environment and these are in turn subdivided into abiotic and biotic factors, the former including climate, soils, relief features, water and others, while the latter correspond to living beings and include human activity.

Protected Areas

In the context of the specific measures that have been and are being adopted in Cuba in favor of the conservation of flora and fauna, conspicuous is the development of protected areas, among whose fundamental objectives are to keep intact specimens of original natural phenomena and to preserve our ecosystems, which will in turn serve as instruments for scientific research and environmental education.

Because of the goal we are pursuing and the means by which we will achieve it, environmental protection is a social activity, since its objective is to

protect man, which at the same time requires his active participation as a chief element in the process.

Without an aware society which loves its environment, we cannot succeed in achieving a harmonic, varied and protected natural environment.

The necessary stock-taking of the natural environment has been going on in Cuba, especially these past few years, since it is not hard to see that a movement is being created that is of interest to more and more people.

Doctor of Biological Sciences Abelardo Moreno Bonilla, the chairman of the National Council for the Conservation of Flora and Fauna, explained to us the reasons behind this movement, which are chiefly the result of the efforts being made by the committees that have been created in all the provinces and in the special municipality of Isle of Youth as well as in other municipalities.

"These committees, in which the People's Government, associated administrative institutions and political and mass organizations participate, were created on the initiative of Commander of the Revolution, Comrade Guillermo Garcia Frias, who is at present serving with the Cuban Academy of Sciences," Dr Moreno informed us. They are of great importance since they constitute the link between the masses and the state scientific and administrative institutions which are responsible for keeping watch over conservation of the country's flora and fauna.

"The proposals as to the areas to be protected have come from these work committees, which are trying to develop them making maximum use of local human and material resources. They also conduct research, scientific studies and environmental education campaigns. In some provinces, like Villa Clara, they have organized students into special interest clubs relating to nature conservation tasks."

Abelardo Moreno accords special importance to the Environmental Conservation Law promulgated by the National Assembly of the People's Government, on the basis of which other complementary laws are being drafted.

The protected areas that are being developed are not all at the same level of development. We must also make it clear that even those that appear to be most advanced are still under study. Their characteristics are being studied and they are working on the compilation of their inventories of flora and fauna, among other things.

However, the preliminary features that gave rise to the proposals for these areas permit us to assert that they are regions of great scientific interest which, because of their value to the ecology, it is advisable to preserve and develop in accordance with the characteristics of each of them, which usually differ among them.

Gene Reserve

There are several individual sciences which converge in studies dealing with the conservation of flora and fauna in this more than fascinating, complex world. One of the objectives which the scientific and social institutions concerned with this field are universally striving to achieve is the maintenance at any cost of a reserve of genes of all biotic species in order to guarantee their inevitable evolution, which will run its course over thousands and millions of years, according to the theory proven by the learned English naturalist, Charles Robert Darwin (1809-1882).

The ability of each species to adapt itself to new conditions in its habitat is contained in its genetic reserves. Each living being exhibits its own characteristics, but these are a small part of those present in its /genotype/ [in boldface], that is, in its /chromosomes/ [in boldface].

Those species that have adapted to the prevailing conditions can survive, but sometimes, whether due to natural phenomena or the direct action of man, these conditions change suddenly or over relatively brief periods of time. Thus those that have already adapted to them cease to do so and only those survive which possess genes in their reserves capable of providing them with other characteristics that will enable them to adapt themselves to the new conditions.

We therefore deduce the fact that the more numerous a population is, the greater will be the stock of genes it is endowed with, thus increasing its potential for survival in the face of unexpected changes in its natural environment.

While often predictable thanks to the scientific advances made by mankind, as a general rule natural phenomena cannot be avoided, but the action of man can be directed in favor of or to the detriment of survival of the species, which is why this point is of primary importance where conservation of the environment is concerned.

Endemism in Cuba

Endemism is one of the traits that is characteristic of Cuban flora and fauna. Over the centuries millions of species have ceased to exist on this planet for one reason or another. Our little country has been no exception to this catastrophe and, whether they may have been migratory or native, many of those life forms that once inhabited our beautiful countryside are now gone.

To cite merely one example, today we lament the loss of the guacamayo (Ara tricolor). This bird with a beautiful, multicolored plumage inhabited our then virgin forests in the 15th century.

This bird disappeared in the middle of the last century due to the destruction of the great forests and the indiscriminate hunting to which it was subjected, chiefly to use its feathers for custom-made clothing. Today we have only a stuffed specimen in the fauna-filled depths of the Institute of Zoology of

the Cuban Academy of Sciences that dates from 150 years back and is considered to be the only one of its kind in the world.

At the present time 10 species of Cuban birds appear in "The Red Book of Endangered Animals" and 32 must be considered to be seriously threatened.

The royal carpenter (*Campephilus principalis*) figures among these birds. It is an extremely rare native subspecies which is only found in some wooded regions in the eastern provinces. In 1968 its presence was reported 7 km north of Cupeyal, Camino de Moa.

Our country does not have many wild mammals, either terrestrial or aquatic, but they are, nevertheless, of scientific interest because most of them are species in danger of extinction, as is the well-known almiqui (*Soledon cubanus*). The hutias are the most typical mammals in Cuba. They belong to the order of Rodentia, of which eight living species have been identified in Cuba. Then there is the manatee or sea cow, *Trichechus manatus*, whose presence at several points on the coasts of Cuba, where the chief rivers empty into the sea, is getting scarcer and scarcer.

There are other very important species of wild mammals, as is the case with the deer, *Odocoileus virginianus*, which is the most beautiful of all. And not to leave them unmentioned, we can also list the wild pig, the wild boar (*Sus scrofa*) and the wild horse (*Equus caballus*), native to Cayo Romano.

Many native species of plants are also located in the protected areas. By way of illustration, let us cite among them the *Trichilla pungens*, native to Bahia Naranjo Holguin, the only place in the world where there are still many specimens.

The guana, *Hildegardia cubensis*, is found in Najasa, Camaguey. The cork palm, *microcycas calocoma*, considered to be one of the oldest species of our flora, is native to Mil Cumbres, Pinar del Rio.

Also well-represented in the areas referred to are the different kinds of woodlands that exist in Cuba, valuable natural resources which it is our duty to preserve, the most noteworthy of which are: *Semicaducifolia* forest on limestone soil at Guanahacabibes and the same kind, but on acid soil, on mountain tops; xerophilous forest at Desembarco del Granma; and poorly drained *Semicaducifolia* forest, as well as the Manglares forest which is the biggest in the country and perhaps the world, is found on the peninsula of Zapata.

Conclusions

The results that have so far been obtained in Cuba in the field of environmental protection are encouraging, especially if we start with the fact that the most important element resides in the conditions that have been created with an eye to the later development of this noble undertaking in which the masses, which are also forging their own future in this, are playing an ever more prominent role.

We are certain that the day is not far off when our beautiful Antillean islands will all be part of an environmental protection area.

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CSQ: 5000/2154

BRIEFS

FISHING WITH CHEMICALS--FISHERMEN around the Afram Lake in Kwahu in the Eastern Region have been warned not to use poisonous chemicals in fishing in the lake. People's Defence Committees in towns and villages along the lake have been directed to keep surveillance and report anyone caught indulging in such dangerous practice. Mr Yeboah Kwame, interim district co-ordinator for PDC's in Kwahu, gave the warning following numerous complaints at a meeting with fishermen and PDCs' from eight fishing towns near Kotoso-Kwahu on Tuesday. Mr Yeboah regretted that the lake which serves as the only source of drinking water in the area should be polluted with dangerous chemicals. He said the practice was dangerous to human health. Mr Yeboah advised the fishermen to organize themselves into co-operative groups so that they could get fishing materials at the control prices. [Excerpt] [Accra GHANAIAN TIMES in English 6 Aug 82 p 5]

CSO: 5000/5812

BRIEFS

MYSTERY OIL SPILL--CAPE TOWN--About 150 penguins have fallen victim to a mystery oil spill somewhere near Cape Agulhas. The oiled birds started coming ashore on Dyer Island off Cape Agulhas on Tuesday, according to a spokesman for the Marine development branch of the department of the environment. The arrival of the birds was reported by a Marine Development Branch employee stationed on the island and a boat was sent to pick them up. However, rough seas whipped up by a strong south-easterly wind created serious difficulties for rescue operations and only about half of the affected birds were picked up. The 53 oiled penguins picked up from the island on Tuesday were taken to the rescue station of the South African National Foundation for the Conservation of Coastal Birds in Wetton. After a 24-hour delay in the rescue operation caused by the high winds, another 90 oil-soaked penguins were picked up and transported to the rescue station. Cleaning and feeding of the stricken birds began shortly after their arrival at the station at noon on Thursday. Mrs Althea Westphal, vice-chairman of SANCCOB, said it was difficult at this stage to determine how many of the oiled penguins would survive. By late Thursday afternoon none of the penguins in the first group had died and all had been cleaned at least once. "We don't know which birds have ingested oil and which have not, although quite a few had oil on their bills when they came in. It could be fatal for those which have swallowed oil," she said. [Text] [Johannesburg THE CITIZEN in English 28 Aug 82 p 13]

DUNSWART POLLUTION CONTROLS--BENONI can look forward to the promise of clearer skies following the recent installation and commissioning of major extensions to the gas cleaning plant at Dunswart Iron and Steel's factory, which is located near the town. The extensions, designed and installed by Brandt Engineering--specialists in air pollution control technology--represent the third stage in a major clean-up programme Dunswart embarked upon almost three years ago. This latest stage is aimed at cleaning the off-gases produced by the steel plant's "C" furnace and is worth more than R1-million to Brandt Engineering, which was involved with the design and installation of the other two stages of the now completed fume extraction plant. The plant is designed to eliminate all visible stack emissions, and is expected to collect more than 34 tons of dust each day. The technology incorporates a design using a reverse air cleaning system, in which the furnace gas is cooled down from more than 1 000°C to about 130°C, and passed through large bag filters before being discharged into the atmosphere. [Text] [Johannesburg THE CITIZEN in English 23 Aug 82 p 27]

EFFECT OF HUMAN ACTIVITY ON ECOLOGICAL AND PHYSIOLOGICAL FEATURES OF ALPINE PLANTS

Tbilisi SOOBASHCHENIYA AKADEMII NAUK GRUZINSKOY SSR Vol 105, No 1, Jan 82
pp 121-124

[Article by G. Sh. Nakhutsrichvili, corresponding member of the GSSR Academy of Sciences, L. D. Khetsuriani, and N. I. Tulashvili, Academy of Sciences of the Georgian SSR, Institute of Botany, manuscript received 30 April 1981]

[Text] The effect on the ecosystems of human activity significantly modifies not only their structure, but also the functional features of individual plant species.

As a result of many years of use of the mountainous meadows of Central Caucasus as pastures, the vertical structure of phytocenoses has almost been completely reduced, the quantity of biomass and the plant surface index have considerably diminished, aerodynamic processes have intensified, the flow of thermal energy in the soil has increased, the erectophilic orientation of the leaves towards the substrate surface has become plagiophilic, and the diffusion resistance of the leaves has drastically diminished [1,2].

Studies on the effect of grazing on the ecological-physiological features (photosynthesis, water regime) of Alpine plants were made by us in 1977-1979 in the subalpine zone of Central Caucasus. Observation objects were two sections of one plant association *Bromus variegatus*--*Agrostis planifolia*--*Trifolium ambiguum* which is represented on the plateau of Elia Mountain (2050 m below sea level, Kazbegi). One of these sections was a preserve, while the second had been grazed by sheep for many years. Observations were made of three characteristic species for this association: *Alchemilla retinervis*, *Trifolium ambiguum* and *Plantago caucasica*.

Comparative phenometric observations of the cenopopulations of these species indicated that under preserve conditions the leaves of these plants were double in size as compared to the pasture. The ecotype of both sections in relation to moisture was almost identical, with low strain of the water balance.

The intensity of photosynthesis was measured by conductometric instrument of V. L. Voznesenskiy. The diffusion resistance was analyzed by diffusion porometer [2], the water potential was determined by the method of V. S. Shardakov, and the water deficit by the method of O. Chatskiy.

One should primarily note that the three species we studied, and especially *Trifolium ambiguum* have fairly high indicators of photosynthetic intensity on both sections (up to 40 mg of CO₂ per gram of dry weight per hour). Almost synchronous observations of the intensity of photosynthesis of plant species of the same name under two conditions which vary in the nature of use established that the difference between the cenopopulations is fairly sharp (table). On the grazed meadow, the maximum intensity of photosynthesis was almost 8 mg of CO₂ more than in the preserve. The difference between the average annual indicators of this process is somewhat lower.

Ecological-Physiological Indicators of Plants on Grazed (1) and Preserve (2) Meadows

Indicators		Alchemilla retinervis		Trifolium ambiguum		Plantago caucasica	
		1	2	1	2	1	2
Intensity of photosynthesis mg x CO ₂ /g ⁻¹ x h ⁻¹	Maximum	37,0	29,0	40,0	34,8	37,8	30,2
	Average	22,7	17,0	26,2	19,8	21,8	15,7
Intensity of transpiration g x cm ₂ /g ⁻² x min ⁻¹	Maximum	6,7	4,4	—	—	8,4	7,5
	Average	3,7	2,5	—	—	5,3	3,8
Water deficit, %	Maximum	18,9	12,9	25,2	21,1	21,6	18,0
	Average	12,5	10,2	15,5	12,1	12,5	10,0
Water potential, cm/sec	Average	11,2	9,4	11,2	9,9	9,9	8,6
	Maximum	1,56	1,20	—	—	2,65	2,26
Diffusion resistance of stoma, bar							

The curves for the diurnal changes in photosynthetic intensity in the populations of one plant species under different conditions of meadow use have different types of curves. Thus, for example, as is apparent from fig. 1, the curve for the diurnal course of photosynthesis of *Alchemilla retinervis* on the pasture has a flatter apex than on the preserve meadow. The maximum intensity of photosynthesis on the pasture occurs already at 09.00 and continues up to 13.00 almost with the same intensity. In the preserve, the maximum of this process occurs at 11.00, but within an hour it diminishes somewhat. The difference between the quantities of photosynthetic intensity appears especially sharply from 09.00-10.00 to 14.00-15.00.

Thus, the intensity of the observed photosynthesis of plants species of the same name on the pasture is considerably higher than under the preserve regime. One should explain this law by the change as a result of alienation of the herbage of the plant growth form towards plagiophily and increase in the possibility of PAR [photosynthetically active radiation] absorption.

Study of the water regime of plants indicated that the difference between species of the same name for this parameter is also clearly pronounced, as with photosynthetic intensity. The plants which developed on the pasture

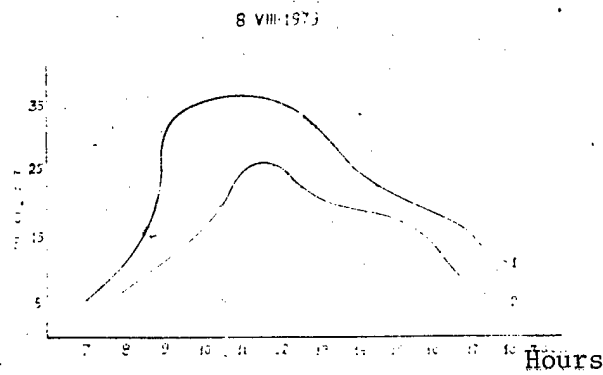


Figure 1. Diurnal Dynamics for Intensity of Photosynthesis of *Alchemilla retinervis* on Grazed (1) and Preserve (2) Meadow

in contrast to the cenopopulations of the preserve, have a comparatively low water potential, high water deficit in the leaves and increased transpiration intensity. Of especial interest are studies of the diffusion resistance of the stomata with the help of a porometer [2]. It was found that the stomal limitation of transpiration is expressed more clearly in the preserve conditions. On the pasture, the plants have low diffusion resistance of the stomata and greater capacity for conducting water (table). It is also important to note that of the species we studied, *Plantago caucasica* differs from all the studied (according to the given technique) of Alpine plants because of the highest capacity for conducting water.

It should be noted in conclusion that the comparatively low water potential of plants on the pasture land is a result of the increase in water exchange per unit of leaf surface as needed. The reason for this law is the low diffusion and aerodynamic resistances of the leaves of the herbaceous dicotyledonous plants [2]. One should also hypothesize that under anthropogenic conditions the increased water loss by the plants is one of the reasons for the increased photosynthetic intensity.

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CSO: 5000/15

USSR

UDC 578.087 1

EXPERIMENTAL CONSTRUCTION OF A SYSTEM FOR BIOINDICATION OF THE WASTE WATER
PURIFICATION PROCESS

Moscow BIOLOGICHESKIYE NAUKI in Russian Vol 219, No 3, Mar 82·p 110

[Article by V. N. Nosov, O. G. Nikitina and V. N. Maksimov, manuscript
deposited in the All-Union Institute of Scientific and Technical Information
No 543a-80 Dep]

[Text] This work covers the many years of experience using biological indication of disorders in waste water purification that was accumulated at the Zelenograd aeration plant. As a result of the statistical analysis, a system was formulated which made it possible to use the population of a number of organisms of the active silt to evaluate the course of purification and to reveal the reasons for the detected disorders. This system makes it possible to analyze the process of purification and to make the necessary recommendations for control during one working day. The basic indicators of the system are quantitatively defined. The system has a digital nature, and the necessary calculations are elementary.

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GREECE

INSECTICIDES FOUND DANGEROUS, MULTINATIONALS BLAMED

Athens TA NEA in Greek 19 Aug 82 p 12

[Text] The multinationals until now considered Greece an unfenced vineyard and, as a consequence, pesticides, banned as unfit in the countries where they were made, were put in use either illegally or even legally with the mere formality of just a check of certain certificates of origin.

This was denounced yesterday in a communique' of the Panhellenic Union of Agronomist Civil Servants (PEGDY), while, as of yesterday, on Mr. Th. Pangalos' deputy minister of Commerce orders, the Market Inspectorate services began confiscating illegal pesticides.

PEGDY in its communique' emphasizes that:

The many insecticides and weedkillers used by our growers are often dispensed by individuals who do not have the proper qualifications.

From the scientific point of view, the fact that there is not sufficient knowledge on the long-term effects of insecticides on the health of those who use them, the consumers who necessarily come into contact with them as well as to the effects on the fauna and flora of land and sea ecosystems, should be considered.

The agronomists propose:

To intensify the control and to extend it to the agricultural poisons used by farmers.

The dispensing of agricultural poisons be made exclusively and only by specialized agronomists.

The Ministry of Commerce is warning consumers that the insecticides which are sold illegally and which the public not only should not use, but should alert police authorities are:

BAYGON SPRAY (green), VETO, mothkiller, SHELTOX flykiller, NEOCID, NEPIN SUPER COMET, PTHEIREX, licekiller, FUZI MAT, PTHEIROXYL, MOON FLOWER, MOTHPROOFER, DELO mothkiller, KRIALLIS, SHELTOX red, OKO SPRAY, RABAK MAT, MOSQUITO COLIS centaur, MOTHKILLER ARISTON, TOXION SOS, PEACOCK, ANTISCOR, EMOTOX, SCOT, JET AEROSOL, SPIRAL KILL ALL,

DAKOR MAT NEO VETO, various naphthalines, PARASINE, SCOR AND, MOTHAKS, CORDE REPULSIVE NICE SMELL, SKOROTOX paraffin candle.

It should be noted that, as regards the BAYGON the Consumers Union has reported it to Consumers International.

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END